REMARKS

Claims 1-49 are currently pending in the application and are presented for reconsideration and further examination in view of the following remarks.

In the outstanding Office Action, claims 1-49 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,125,197 to Mack et al.

By this Response no claims are amended and the prior art rejection is traversed. Arguments in support thereof are provided.

Rejection under 35 U.S.C. § 102(e)

The Examiner rejected claims 1-49 under 35 U.S.C. § 102(e) as being anticipated by Mack et al.

Response

Reconsideration and withdrawal of the rejection is respectfully requested.

The test for anticipation under section 102 is whether each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP §2131. The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

It is respectfully submitted that Mack et al. fails to disclose each and every element as set forth in independent claims 1 and 25.

Independent claim 1 of the present invention is recited as:

"A digital imaging system comprising:

A. an image recording device configured to record at least one image of a scene, the scene comprising ***at least one object and at least one target***;

B. a scene illumination arrangement configured to illuminate the scene, the scene illumination arrangement being configured to illuminate the scene ***to facilitate disambiguation between the at least one object and the at least one target***;

C. an image processing subsystem configured to process the at least one image to identify ***a location of the image of the at least one target*** in the at least one image, thereby to facilitate relating a local coordinate system associated with the location from which the image recording device recorded the at least one image of the scene ***to a global coordinate system***."
[emphasis added]

Independent claim 25 of the present invention is recited as:

"A digital imaging method comprising the steps of:

A. illuminating a scene, the scene ***comprising at least one object and at least one target*** in a manner to ***facilitate disambiguation between the at least one object and the at least one target***;

B. recording at least one image of the scene; and

C. processing the at least one image to identify a location of the image of ***the at least one target*** in the at least one image, thereby to facilitate relating a local coordinate system associated with the location from which the image recording device recorded the at least one image of the scene ***to a global coordinate system***."
[emphasis added]

The term "target" in the claims is defined in paragraph [0003] of the published application:

"... there are certain features in the scene, as recorded in the images, that can be accurately detected and whose positions and sizes can be accurately measured. These features, which may be referred to as "anchor points " or "targets," can be planted artificially within the scene to provide reference information for the imaging system. The targets possess predetermined optical characteristics and can readily be automatically differentiated by the imaging system from other objects in the scene. In addition, the ***imaging system knows the positions in the scene, relative to a three-dimensional coordinate system, of respective ones of the targets****." [emphasis added]*

The term "object" is used in the present invention generally to refer to the specific entity in a scene regarding which it is desired to obtain the three-dimensional (3D) coordinates thereof in relation to a global coordinate system.

According to the present invention, an image of a scene is provided, in which the targets are especially highlighted, to enable the 3D data of the object in the scene ***to be related to a global coordinate system.*** **[emphasis added]** This is done in the present application by relating the 3D data of the ***object*** to the coordinates of the ***targets*** which are known, both in relation to the scene, by virtue of the imaging process, and also (pre-known) in relation to the global coordinate system. [emphasis added] See paragraph C of both claims 1 and 25.

Mack et al. discloses a method and apparatus for the processing of stereoscopic electronic images into three-dimensional computer models of real-time objects. FIG. 3a illustrates a "target object" to be stereoscopically imaged.

It should be noted that while Mack et al. discloses a method and apparatus for extracting 3D data from a "target object," there are no separate "targets" and "objects" in the meaning of the present invention. Rather, "target object" appears to refer to the object whose 3D structure it is desired to determine. Nowhere in this reference is there any disclosure or hint as to a "target" in the meaning of the present invention, nor of the desire to relate the 3D coordinates of the "target object" to a global coordinate system. The problem being addressed by the reference is different to that of the present invention, i.e., slow, time consuming, and difficult generation of 3-D data. See column 1, lines 51-60. The solution provided by the reference is not the same nor is it relevant to that provided by the present invention, i.e., designating a first point and a line equation for one image,

determining a second point and a second line equation in another image, and determining the intersection of the two line equations. See Abstract.

Referring in detail to the Examiner's comments on pages 2-3 of the Office Action regarding claims l and 25:

Fig. 1, items 12 and 13 actually refer to two imaging devices, which are configured to take at least ***two images*** of ***one object*** (the face of Figs. 3a-3d), in contrast to the present invention, in which in claim 1 at least one image is provided of at least ***2 different classes of entities - a target and an object***. [emphasis added]

Figure 1, item 16 refers to "a light device 16 to project an originating light beam" which is diffracted by device 17 to provide a 'structured light' pattern (see column 4, lines 21 to 30). In contrast to claim 1, item 16 is not disclosed nor hinted to as being configured to illuminate the scene to facilitate disambiguation between the at least one object and the at least one target, nor does it allow such disambiguation. Similarly, Figure 4, items 42 or 44 refer to obtaining textural data for the object. Textural data, as defined in column 4, lines 2 to 8, refers to "physical surface properties of an object," including color, and this is applied to a triangulated structure, such as illustrated in Fig. 3d (see column 4, lines 2, 3). Again, in contrast to claim 25, there is no distinction being made between any target and an object. It should also be emphasized that texture in the meaning of the cited reference is not synonymous with a "target" of the present invention.

Figure 11, items 110-134 disclose a series of steps to determine the coordinates of points of stripes illuminated onto the object, related to a local coordinate system. There is no mention here either about a "target" in the meaning of the present invention. Similarly, Figure 4, item 41 refers to

projecting a structured light onto an object (see column 5, lines 2-4), and this is used to enable the 3D structure thereof to be determined. There is no disclosure nor hint that this is to facilitate disambiguation between the at least one object and the at least one target, nor can such, disambiguation be performed according to the present invention using the Mack et al. disclosure.

Fig. 1, item 19 refers to a computing device. Column 3, lines 43 to 67 refer to the computing device being capable of processing a stereoscopic image captured by the imaging devices 12, 13 into 3D data. Column 4, lines 27 to 45 refers to structured light, such as strips, being used to facilitate recognition of the structure of an object. In contrast to claim 1 or claim 25 of the present invention, in none of these items within Mack et al. is there any mention or hint of the at least one image being processed to identify a location of the image of the at least one target in the at least one image, thereby to facilitate relating a local coordinate system associated with the location from which the image recording device recorded the at least one image of the scene to a global coordinate system.

Thus, in terms of novelty, the cited reference does not disclose each and every element of the present invention as recited in claims 1 and 25. It appears that the Examiner is arguing that the term "targets" as recited in the claims of the present application is synonymous with the "texturing" of the reference. For example, in Fig. 4 of the reference, once the 3D structure of the object has been found using structured light, another image of the object may be taken to provide textural data. This is very different from providing an image in which the targets are especially highlighted, to enable the 3D data of the object to be related to a global coordinate system. Again, such texturing is not synonymous with the "target" of the present invention. Specifically, such texturing does not

conform to the definition presented in paragraph [0003] of the instant specification, and moreover, does not enable the local coordinate system of an object to be related to a global coordinate system, in contrast to the present invention.

Similar arguments can be formulated regarding the Examiner's objections to the dependent claims.

It is therefore respectfully submitted that the present invention is novel and non-obvious over the cited reference.

It is therefore respectively submitted that the rejection of independent claims 1 and 25 under 35 USC 102(e) should be withdrawn.

It is also submitted that the rejection of dependent claims 2-24 and 26-49 under 35 USC 102(e) should be withdrawn *inter alia,* as they are dependent on the respective independent claims, and for at least similar reasons discussed in detail above with reference to claims 1 and 25.

Applicants respectfully submit that the Mack et al. patent does not teach or suggest each and every element as recited in claims 1 and 15 of the present invention; and therefore respectfully submit that the claims as presently presented patentably define over Mack et al. taken alone or in combination.

Accordingly, Applicants request the Examiner to reconsider and withdraw the rejection of presently pending claims 1-49.

CONCLUSION

In light of the foregoing, Applicants submit that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants

respectfully request that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application. Favorable action with an early allowance of the claims is earnestly solicited.

Respectfully submitted,

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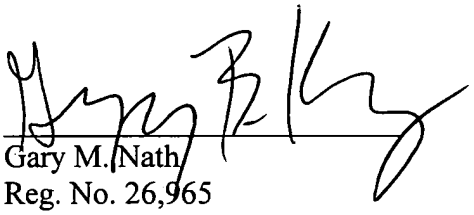

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